

Content-Aware Automatic Photo Enhancement Supplementary Material

1 Introduction

The supplementary material includes a screenshot of the application used in our experiment (below), and a number of automatic enhancement results sets. The first 7 sets correspond to images that appear in the paper, and most of the others are additional results. About half of the input images in this document are from the set of 100 images that were randomly chosen from the MIT-Adobe 5K dataset [BPCD11] for our experiment.

Please view this page with a resolution of least 1280x960, or any other resolution that will enable you to see the whole page without scrolling.

1/30 Please click the button of the nicer-looking image of the following pair, in your opinion. If the images look the same or you don't think one looks even a bit better than the other, please click the "No Difference" button. Kindly wait for both images to load before clicking one of them.

If loading of the images takes too long, please refresh the page.

All original images were taken from http://graphics.csail.mit.edu/fivek_dataset/



The left image looks better

They look the same to me

The right image looks better

Figure 1: The screen presented to the participants in our user study.

2 Comparison with several commercial products



Input



Our Result



Office Picture Manager



Photoshop Elements



Picasa



Input



Our Result



Office Picture Manager



Photoshop Elements



Picasa



Input



Our Result



Office Picture Manager



Photoshop Elements



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Our Result



Office Picture Manager



Photoshop Elements



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Our Result



Office Picture Manager



Photoshop Elements



Picasa



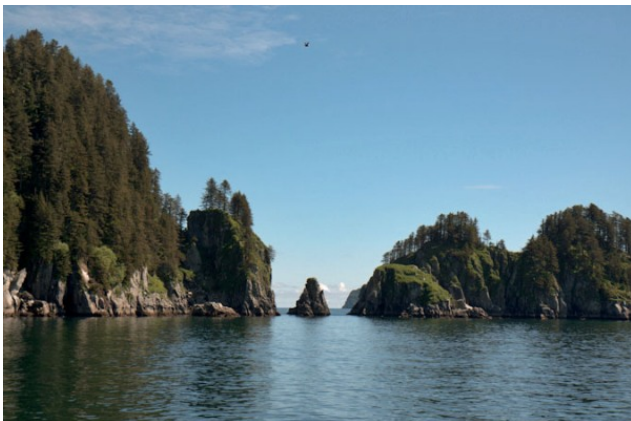
Input



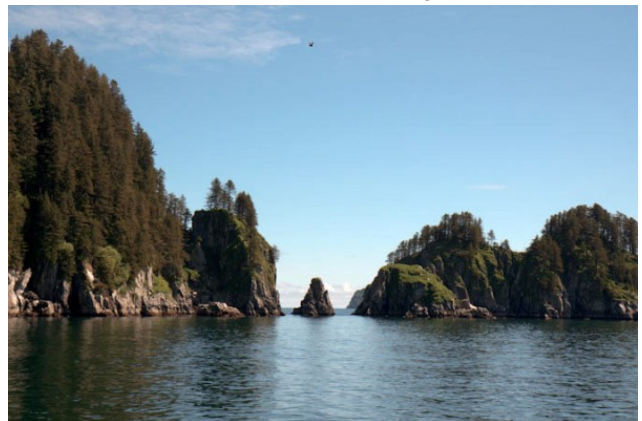
Our Result



Office Picture Manager



Photoshop Elements



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Our Result



Office Picture Manager



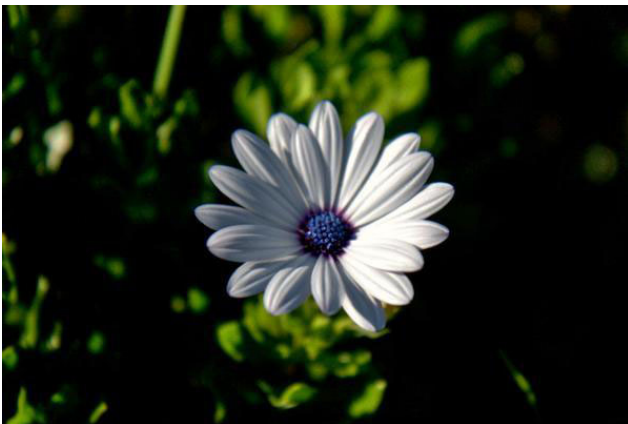
Photoshop Elements



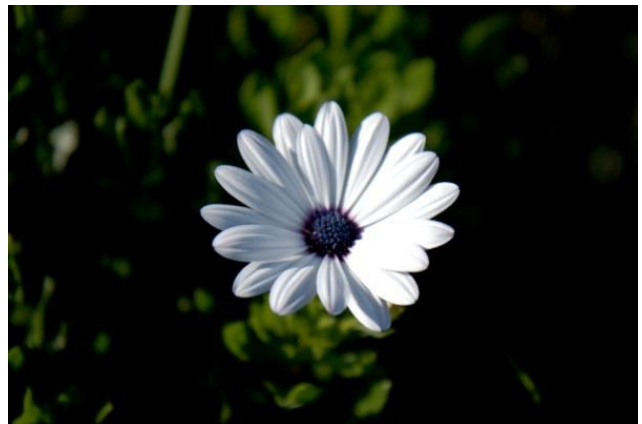
Picasa



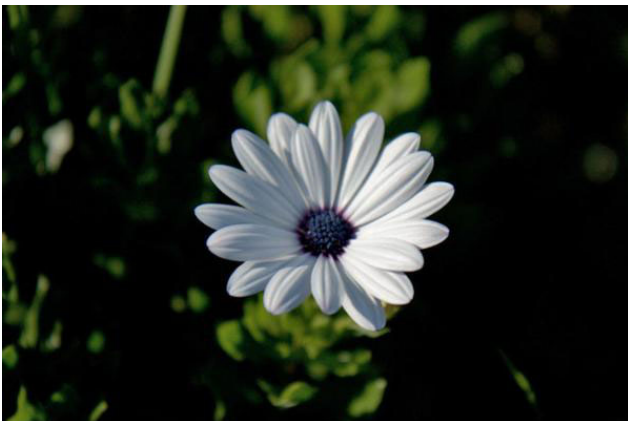
Input



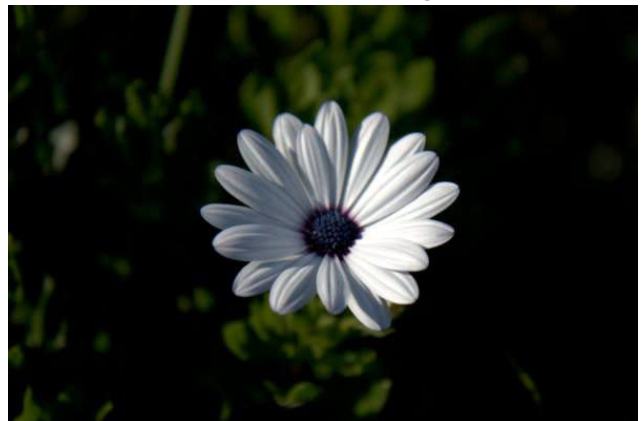
Our Result



Office Picture Manager



Photoshop Elements



Picasa



Input



Our Result



Office Picture Manager



Photoshop Elements



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Our Result



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Office Picture Manager



Photoshop Elements



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Our Result



Office Picture Manager



Photoshop Elements



Picasa



Input



Our Result



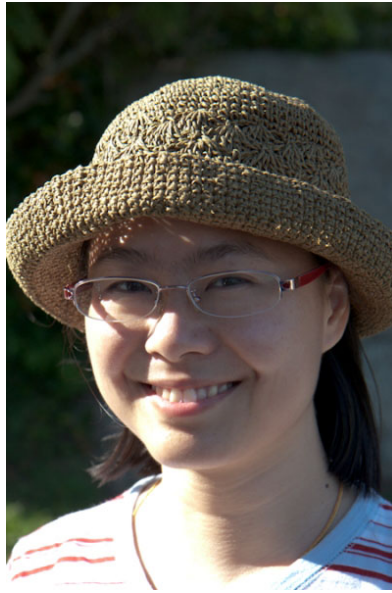
Office Picture Manager



Photoshop Elements



Picasa



Input



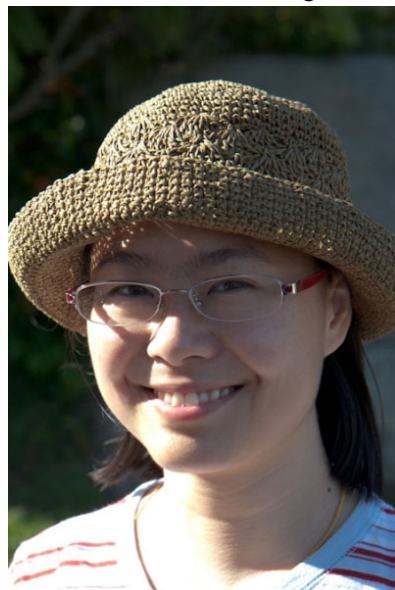
Our Result



Office Picture Manager



Photoshop Elements



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Our Result



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Photoshop Elements



Picasa



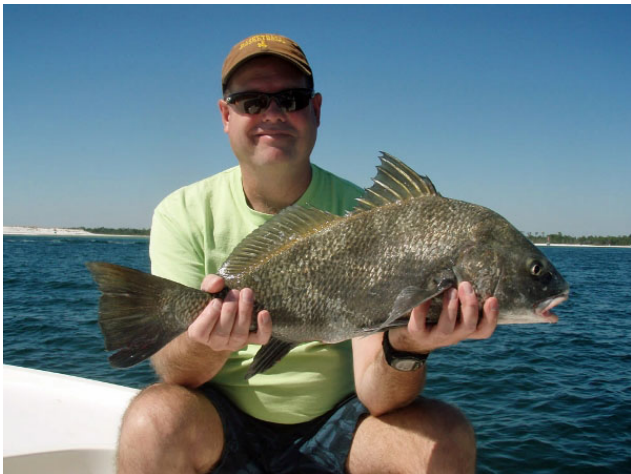
Input



Our Result



Office Picture Manager



Photoshop Elements



Picasa

3 Comparison with the method trained by Bychkovsky et al.



Input



Our Result



Bychkovsky et al. [BPCD11]



Input



Our Result



Bychkovsky et al. [BPCD11]



Input



Our Result



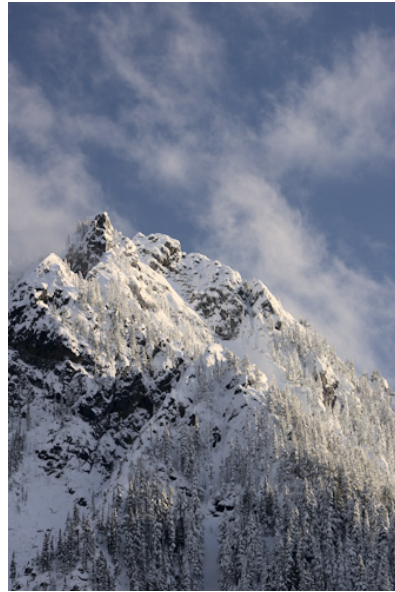
Bychkovsky et al. [BPCD11]



Input



Our Result



Bychkovsky et al. [BPCD11]



Input



Our Result



Bychkovsky et al. [BPCD11]

4 Comparison with the method trained by Caicedo et al.



Input



Our Result



Caicedo et al. [CKK11]



Input



Our Result



Caicedo et al. [CKK11]

5 Limitations

Below you will find examples of failure cases of our method. In all examples the left image is the input one and the one on the right is our result.

We start with an example of an skin detection failure:



Input

Result

Here the skin detector has misclassified pixels on the wall near the face as face skin pixels, and as a result parts of the background wall around the face were brightened more than the rest of the wall.

In the next image, a distant mountain is classified as sky or cloud and therefore its colors are “corrected” towards blue:



Input

Result

The following two examples are images where there is no sky at all, but there is a smooth region in the top part of the image sufficiently close to sky colors to be erroneously classified as sky and “corrected” towards blue:



Input

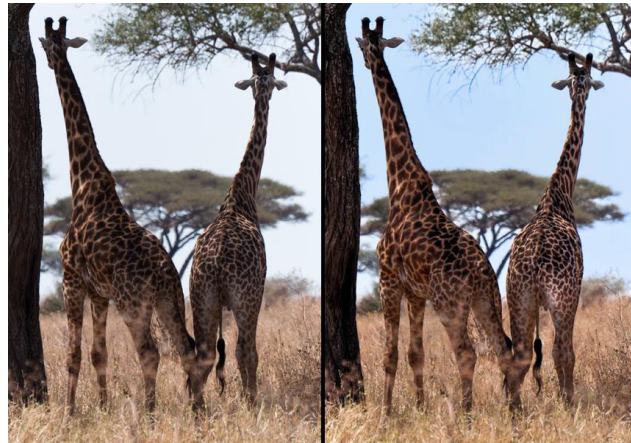
Result



Input

Result

Finally, in this example the sky is partially covered by branches of a tree, thus isolating small fragments of the sky. The pixels inside these fragments were not correctly classified as sky, and have slightly different color in the result produced by our method:



Input

Result